Problem/Question/Observation

Does light have an effect on the growth of a plant?

Background Information – Photosynthesis is a process that helps a plant make its own energy/food. Light is a requirement for plants to undergo photosynthesis.

Hypotheses:

General: Different color lights have an effect on the growth of a bean plant.

Directional: Green light will cause a plant to grow faster than a plant exposed to any other color of light.

Measureable: Green light will cause a plant to be at least 3 cm taller at the end of a one week collection period of growth.

Materials:

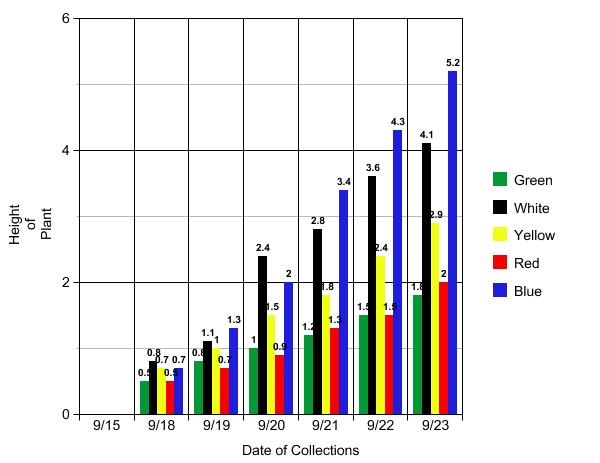
* Seeds
* Plastic Containers
* Metric Ruler
* Water
* Colored Lenses
* Light Source

Procedure:

1. Place 2 seeds into each of the plastic containers filled with soil.
2. Using a watering can, pour enough water on the bean seed to saturate the seeds.
3. Separate the groups of seeds into the different colored light which they are going to receive.
4. Collect data on a daily basis during the week long collection period.

Data/Results

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Color of Light | Height of the bean plant | | | | | | |
|  | 9/15 (initial day of planting) | 9/18 | 9/19 | 9/20 | 9/21 | 9/22 | 9/23 |
| White | 0 | .8 | 1.1 | 2.4 |  | 3.6 | 4.1 |
| Green | 0 | .5 | .8 | 1.0 |  | 1.5 | 1.8 |
| Red | 0 | .5 | .7 | .9 |  | 1.5 | 2.0 |
| Yellow | 0 | .7 | 1.0 | 1.5 |  | 2.4 | 2.9 |
| Blue | 0 | .7 | 1.3 | 2.0 |  | 4.3 | 5.2 |



Analysis/Conclusion

The original hypotheses stated that the green light would have a positive effect on the growth of a bean plant. The data conclusively shows that green light does not help in the speeding up of the growth of the plant. In fact, at the end of the collection period, the bean plant which received the green light grew the slowest. The height on the final date of collection, 9/23, was only 1.8. The blue light seemed to cause the plant to grow the best because it reached the largest height of 5.2.

Errors that could have happened during the time of this experiment include the amount of water. Some plants could have received more water than the others. Also, the amount of light could have had an effect on the growth patterns, not the type of light. I was also absent on 9/21, so my plants were not measured on that day.

The data stills shows that the plant exposed to the blue light grew the highest after the week long collection. So, in the end I reject my hypothesis.